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AUTHOR Adams, William H.: Bielicki, Raymond J.
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ABSTRACT

The paper describes Project ADVANCE, a Behavior Management System which addressed the behavioral adjustment, academic performance, and vocational development needs of 44 emotionally disturbed students (between the ages of 14 and 20) in Salem County, New Jersey. Section I provides an introduction with information on project goals, the significance of results, and cost and exportability factors. Section II addresses the effectiveness/success of the project by outlining the purpose and objectives (to provide a program that modifies undesirable social behaviors): program activities (learner activities, teacher activities, use of traditional or nontraditional materials, special management plans, parent involvement): evaluation design: results: and analysis. Noted among findings are that there were significantly higher posttest scores concerning computational and communications skills, between three and four of the five targeted behaviors met the standard of 50% reduction in infractions during each of 3 years of the program, and the program met projected growth as measured by individualized education program standards and minimum classroom academic progress as set by instructors on a weekly basis. A final section discusses exportability in terms of the project's educational significance, target population, staffing and training requirements, materials, equipment, and facilities: minimum adoption or replication: replication costs: and special problems. (SB)

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Alternative Design for Vocational and Necessary Cognitive Education for Secondary Emotionally Disturbed Students

Presented at the 59th Annual Convention
of the Council for Exceptional Children,
April, 1981, New York, N.Y.

by
Dr. William H. Adams
and
Raymond J. Bielicki

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Salem, New Jersey

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ABSTRACT

CEC 59th Annual International Convention

"Alternative Design for Vocational and Necessary Cognitive Education Exclusively for Secondary Emotionally Disturbed Students - Program Operations and Concepts Based on Three Year Field Test Results"

by

Dr. William H. Adams and Raymond J. Bielicki

Based on an assessment of three years of field testing results which has led the program toward validation, the presentation chiefly addressed the effective operation of a Behavior Modification Management System within a total educational program consisting of academic and vocational components specifically designed toward the needs of secondary youth classified emotionally disturbed. Focal points within the presentation provided a clear framework of successful program functions which effectively interface traditional support personnel to a system of measurable adjustment of social behaviors to accomplish successful academic and vocational training. Professionals were given a tested working educational model compatible to the system of public education which demonstrates both educational and economic significance for the emotionally disturbed. The model provided a unique mainstreaming process based on a quantitative mechanism concerning necessary targeted behaviors for successful integration into the mainstream of secondary educational programs.

The model's nucleus addressed adjustment in the observable behaviors of students which reflect acceptable peer interaction, decreases in distractibility patterns, and overall academic performance improvement. The Behavior Modification component of the model was further expended through the demonstration of practical classroom exercises for implementation by classroom teachers or aides.

Beyond the nucleus of the model, critical program components included an explication of the role and function of the program's Nontraditional Child Study Team which is pioneering a significant reorientation within the traditional roles of Learning Disability Teacher Consultants, School Psychologists and School Social Workers.

In summary, a total program design for secondary level emotionally disturbed students was presented as a tested model delivery system comprising a full Behavior Modification network that supports effective educational services for academic and vocational development.

A. Project Overview

As a result of a countywide study in 1976, the Salem County Board for Vocational Education accepted a request to initiate and develop a program to service approximately 44 classified emotionally disturbed students between the ages of 14 and 20 who were eligible for placement in an alternative education program. Prior to this time, these students were referred out-of-county to private programs which, in many cases, did not necessarily reflect the least restrictive appropriate environment and whose placement generated concerns associated with distance, travel time and cost. Demonstrating successful services, the program addressed the need for an in-county program exclusively for secondary level, emotionally disturbed students whereby social behaviors are modified in order to complete successfully prevocational/vocational training, or to return students to the academic mainstream of secondary level educational programs.

The overall goal of the program is addressed through the program components of behavioral adjustment, academic performance, and vocational development.

Behavioral adjustment, a common denominator throughout the entire program, is implemented through a formalized behavior modification management system which includes a basic point system, time out and work rooms, and extensive supportive services through crisis and therapeutic counseling and parental liaison. Academic services of the program are matched to successful implementation of IEPs for each enrolled student. This component is implemented through individualized weekly lesson plans based on IEP objectives and supportive services through the District's Learning Disability Teacher Consultant.

The program's vocational component is implemented through prevocational shop activities and vocational training in seven occupational programs within the Special Needs Division of the

Significance of Results

Yearly assessment of the program components concerning behavior modification,and academic and vocational development, show successful educational services of the program that addresses the intent of the mandates in Public Law 94-142 relating to the least restrictive environment that is appropriate to classification and individual student needs. More specifically, the program demonstrates that successful services can be implemented to secondary level emotionally disturbed students in the public sector which illustrates a viable option to local school districts. To some extent, parallel services demonstrated by the Project ADVANCE program normally have been reserved to the private sector which may prove inaccessible to local needs by virtue of distance and cost.

Cost and Exportability Factors

Replication costs by an adopting district can reflect a savings of 36% based on the alternative private school placement of 33 emotionally disturbed secondary level students. This percentage decreases or increases based on the number of E. D. students being served. It should be noted that the identified state maximum for private school placement for E. D. students is 44% higher than the demonstrated public training program at Project ADVANCE for the same population.

Based on the individual needs of local school districts, the exportability of the program is reflective of the degree of replication which may extend from adopting the Behavior Modification System to all program components. The degree of exportability is also reflected in the individual district's facilities and resources which should include counseling personnel, teachers of the handicapped, and industrial arts programs. Consequently, exportability of the program is enhanced from a flexibility perspective by replicating individual components of the program that addresses chronically disruptive students to more sophisticated adoption that exclusively and effectively meets the needs of students classified emotionally disturbed and socially maladjusted.

II. Effectiveness/Success

A. Purpose and Objectives

1. Major Purpose

The purpose of Project ADVANCE is to provide a program (management, delivery and support systems), based on the needs of secondary level emotionally disturbed classified students,that modifies undesirable social behaviors which have prevented successful educational participation within regular secondary educational programs.

2. Anticipated Changes or Objectives

a. The yearly pre program mean of the observed frequency of infractions of target behaviors for all Project participants will be significantly higher than the post program mean at the .05 level or better; and the mean number of tokens awarded to all participants for acceptable behavior in the 5 target behaviors during the last quarter of a school year will be significantly higher than the number awarded during the first quarter at the .05 level or better; and sixty percent of second year students will maintain mainstreamed status by adhering to the provisions of behavior contracts calling for students to receive a yearly average of at least 60 points on the behaviors for which they are evaluated quarterly by teachers; and, Project students as a group will show a 50% reduction from the beginning to the end of the year on the number of infractions in each of the 5 targeted behaviors and in all 5 targeted behaviors together; and at the end of Project students' first year 60% of them will exhibit social behaviors equal to or more acceptable than that of non-Project students enrolled in vocational programs.

b. The yearly post program mean scores of Project students will be significantly higher at the .05 level or better than pre program mean scores in the academic areas of communication skills (reading, receptive vocabulary, expressive vocabulary), survival skills (reading, math), and computational skills as measured by standardized tests; and, 75% of Project students will meet or exceed the expected growth level scores of their IEP in 5 of the 6 academic areas as measured by standardized tests; and, 60% of Project students will achieve the minimum academic standard of achievement scores set for them by their teachers in quantitative and communication skills.

c. Sixty percent of Project students enrolled in prevocational shop will achieve a minimum performance level score of 70 in skill acquisition as per teacher judgement; and 60% of Project students enrolled in courses of an occupational area will acquire at least the minimum skills of the area as shown on the skill development records.

d. A significant relationship equal to or better than the .05 level will exist between variables measuring program activities embodied in the management, delivery, and support systems and variables measuring student outcomes.

4. Objective Relationship

The three previously stated outcome objectives* interrelate as a natural consequence of the overall desired development in the areas of behavior, academic progress and vocational development, with behavioral change being paramount.

5. Unanticipated Program Change

Based on the genesis of the program to provide a county-wide program to meet locally the needs of secondary classified emotionally disturbed youth, the original purpose has changed by expansion. Through examination of the program by school districts from two adjoining counties, the program now serves students in a tri-county area consisting of Cumberland, Glcucester, and Salem.

*Objectives (a,b,c)

B. Program Activities

1. Learner Activities

a. Behavior Management System - Students are awarded points for appropriate behavior every 15 minutes throughout the day.

(1) Twice a day, before lunch and at the end of the school day, students are allowed to purchase consumables with the appropriate amount of points earned.

(2) By saving and accruing their points and by behaving appropriately from Monday through Wednesday, on Thursday, students are allowed to go to the Vo-Tech Mini Mall with vouchers that enable them to purchase available items ranging from juice or milk, to a basketball or hair dryer. This depends on how many points have been accrued for a period of time.

(3) Every Friday, the top six students for that week in attendance and points accumulated are rewarded by an afternoon trip to either the YMCA or bowling alley.

b. Academic Activities - Every student works according to his individualized educational plan (IEP) which prescribes what the student needs to progress to acceptable levels of performance. Also, each student has a copy of his lesson plan for the week and he/she is able to follow along at their own pace, each knowing what is expected of them for the week.

c. Vocational Activities

(1) Prevocational first year students receive 5 hours/week of prevocational training in a shop setting. Aspects of this curriculum include woodworking, electrical, car maintenance, and reupholstery. Students become involved in group and individual projects.

(2) Joint Vocational Program - The more advanced students are given the opportunity to be involved in vocational programs at the Young Center for the entire afternoon session. This consists of vocational training in a single shop area for 12½ hours/week. Students are counseled as to which shop they would wish to enter and may pick from the following: Health Occupations, Graphic Occupations, Horticulture/Landscape, Power Mechanics, Building Trades, Distributive Education, or Garment Construction/Alterations.

d. Recreational Activities - Students are given approximately 45 minutes/day on recreational activities. Many types of sports are experienced by the students with an emphasis on "carry over" sports and the social aspects of participation and spectatorship. Students are evaluated according to their participation in the recreational period. Three times a year major field trips are taken on a Level I, II, and III basis. A chart is kept in full view of all students in the all-purpose room and students who have 80% participation and attendance will go on a Level I trip, 65% participation and attendance will result in a Level II trip, and 60% participation and attendance results in a Level III trip. These trips can range from a ball game at Veteran's Stadium in Philadelphia, to a tour of the Bridgeton Zoo.

2. Teacher Activities

a. Behavior Management System - Under the direction of the classroom teacher, supplemental teachers (aides) will record the points for every student at 15 minute intervals. These recorded daily point totals are then submitted to the counselor weekly for tallying. Also, certain target behaviors will be pre and post baselined by the aides for a five to ten day period to determine individual and group progress.

b. Academic Activities

(1) Individual weekly lesson plans on each student are completed.

(2) Textbooks and other appropriate educational aides and materials are provided that provide for the implementation of that student's IEP.

(3) Academic progress records are maintained for nine week periods which includes a narrative and checklist records of academic skills in Communication, Computation, Survival Skills, Recreation, Pre-Vocational and other activity skills.

(4) Mid-marking period progress reports are completed half-way through each working period to provide an idea of how the student is progressing.

c. Vocational Activities

(1) Prevocational - A teacher is in charge of the implementation of this curriculum who supervises, guides, and works with the students in projects.

(2) Joint Vocational Program - Two teachers of the handicapped and two aides go to the Young Center in the afternoon session to serve in a team teaching capacity in programs where there are a high percentage of Project ADVANCE students. The aim of this program is to combine the "hands-on" knowledge of the special needs students that the teacher of the handicapped has.

d. Recreation Activities - The counselor is in charge of the implementation of the recreation curriculum. Teachers and aides participate in this program an supervise and chaperone all related field trips.

3. Use of Traditional or Non-traditional Materials

   a. Traditional Materials - Each student is provided with the materials that are needed to implement and fulfill their IEP. Many types of AVA equipment can be provided including individual audio-visual cassettes that the student can use in his individual carrel.

   b. Non-traditional Materials - Four types of student evaluation kits are used and they are:

      (1) COATS - Comprehensive Occupation Assessment and Training System. This is designed to help the students job match and measure employability skills and attitudes.

      (2) PIES - Picture Interest Exploration Survey - This is given to determine the student's interests in certain vocations.

      (3) SINGER - This measures and evaluates vocational aptitude skills.

      (4) MINDS - This helps to develop skills in basic tool use.

4. Special Management Plans

   a. Behavior Management System - Included in this system are options that are not included in a traditional school's approach to behavioral problems of the E.D. student.

      (1) Time-Out Room - This is an in-house facility that provides our students with the option of being alone if they feel the need to do so.

      (2) Workroom - This is available to certain students who consistently use inappropriate language or interfere with the acceptable efforts of others. The workroom is supervised by a crisis aide and

procedures allow for a student's return to class when acceptable behavior is demonstrated for a designated period of time. Student's assignments come with the student and credit is given for assignments and points assigned by the workroom teacher.

(3) Extensive Counseling - Students who are having behavioral or emotional problems will be counseled by the counselor, supervisor, or psychologist. Time is taken by any, or any combination of these people to individually help the students cope with the problem that they are having.

(4) Non-traditional Child Study Team - As part of this team, the psychologist provides crisis counseling on a need basis, and individual and group counseling on a need basis and by pre-determined schedule. This acts as a preventative measure to reduce problems or minimize their effect.

b. Academic Activities

(1) As part of the Non-traditional Child Study Team, the LDT-C provides services to all instructional staff concerning instructional materials, techniques and resources necessary to implement IEPs through weekly lesson plans for each student. Also, pre and post-tests will be administered by the LDT-C to each enrolled student to determine specific academic progress during the school year.

(2) The Project supervisor will refine instructional strategies on a bi-weekly basis through mini-workshops for instructional staff.

5. Duration and Intensity of Process

a. Behavior Management System - This is a daily process that is on-going from the time the students enter the program

until they leave.

b. Academic Activities - All students receive their academics, computation and communication, in the a.m. session before lunch. This is continuous throughout the school year.

c. Vocational Activities

(1) Pre-vocational - This is provided for first year students for 1 hour every morning continuous throughout the school year.

(2) Joint Vocational Program - This is provided for the more advanced students for 2½ hours every afternoon at the Young Center. This is continuous throughout the year.

d. Recreation Activities

(1) First year students receive their recreation early in the afternoon session everyday all year.

(2) More advanced students receive their recreation late in the morning session everyday continuous throughout the year.

Students are accepted into the Project ADVANCE program for a minimum of six months and a possible maximum of 4 years. The in-house Child Study Team, in conjunction with the sending district's Child Study Team, periodically check the student's progress within our program and makes recommendations on placement. The average duration of a student within our program is usually from 1 to 2 years.

6. Involvement of Parents

As part of the admission procedure to be placed at Project ADVANCE, parents are required to tour the facility with their child and receive a brief orientation from the Child

Study Team and the Project supervisor. Parents are continually contacted by the main office concerning attendance and academic progress. Also, parent visitations are required if there is a student suspension and if an attendance problem develops. The in-house Social Worker completes follow-up through home visitations.

It is the philosophy of Project ADVANCE to involve parents consistently to keep them aware of what is occuring at Project ADVANCE through Open House and Back-to-School Night, and extend their support in an united effort to provide a more meaningful and successful educational experience for their child.

C. Evaluation Design

1. The evaluation design is a one-group quasi-experimental repeated measures pretest-posttest design. The population in each of the three years of Project operation included all enrolled students. Students range in age from 14 to 20 and all are classified as emotionally disturbed. Project students have been recommended by their respective child study teams for educational placement in the program as a part of their IEP. In the third year, 45 students were in the program for varying periods of time; in the second year, there were 44 students; and in the first year there were 43 students. Because this population is highly transient, only data from those students who were in the Project for a majority of the school year are used for evaluating the effectiveness/success of the Project.

2. Chart A contains the information on instrumentation.

3. Chart B contains information on data gathering.

CHART A

SUMMARY INFORMATION ON INSTRUMENTS

INSTRUMENT	VALIDITY	RELIABILITY	NORMS GROUP	OTHER INFORMATION
Objective #1 CHADS - observation score of 5 target behaviors	Content-Literature search to identify behavior problems of ED students. Expert Reviews. Concurrent r = .77 with Devereaux	Interrater .82	Project ADVANCE	Behavior Infractions tallied or tokens awarded for appropriate in each 15 minute period
Teacher grading period reports	Content - Process used in development. By review of other instruments, literature search and expert involvement	N/A	All Salem Vo-Tech Students	Instrument used routinely in recording grading period data.
Objective #2 Gray Oral Reading	Content-Review of reading textbooks, expert panel reviews	Coefficient of equivalence .967-.977	Originally representative groups in Fla. and Chicago	Individual administration, 13 reading passages each more difficult than preceding
SRA Survival Skills Test	Content-Expert reviews, written by test developers	Internal consistency .91-.96	User Norms	60 reading, 60 math items. For use with grades 7-12. Group administered not timed
Peabody Picture Vocabulary Test	Content - Process used in development. Concurrent-High r's with Stanford-Binet and WISC.	Coefficient of equivalence .67 - .84	Originally 4,000 children in and around Nashville	Individually administered.
Wide Range Achievement Test	Concurrent r's with achievement .78-.88. High with WAIS, WISC and others	Internal consistency .79-.94	40,000 children in 7 states	Mostly individually administered. Timed.

CHART A - Page 2

SUMMARY INFORMATION ON INSTRUMENTS

INSTRUMENT	VALIDITY	RELIABILITY	NORMS GROUP	OTHER INFORMATION
Gates-McKillop	Content-process used in development, expert review, matching with text-books.	Internal consistency .85	Unknown	Individually administered.
Detroit Tests of Learning Aptitude	Content-process used in development, expert review	Internal consistency .67-.96	75,000 classified students in Detroit	Mostly individually administered.
Key Math: Diagnostic Arithmetic	Content-Process used in development, marching with text-books,expert review.	Internal consistency .96	Originally 1200 nationally.	Individually administered.
Tests of Adult BMIC Education	Content-Review of textbooks, expert review	N/A	Grade 2-9 Nationwide	Deriven from California Achievement. Group administered.
Objective #3 Teacher Grading Period Reports	Content-Process used in development by review of other instruments,literature search and expert involvement	N/A	All Salem County Vo-Tech School students	Instrument used routinely in recording grading period data.

Objective #4

Instruments described in Objectives #1 and #2 above.

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CHART B

RECORD OF DATA COLLECTION AND ANALYSIS

OBJECTIVE	EVALUATION INSTRUMENTS	DATA COLLECTION			DATA ANALYSIS	
		On Whom	When	By Whom	How	Procedures
#1	CHADS	All Project Students	Daily	Teachers & aides	IBM Twin 3031's SPSS	Descriptive and matching t tests
	Grade Reports	All Project Students	Quarterly	Teachers	"	Frequency Distributions
#2	All Standardized Tests	All Project Students	Fall & Spring	LDTC - Ms. Ruth Levick	"	Descriptive and matching t tests
	Grade Reports	All Project Students	Quarterly	Teachers	"	Frequency Distributions
#3	Grade Reports	All Project Students	Quarterly	Teachers	"	Frequency Distributions
#4	CHADS	All Project Students	Daily	Teachers and aides	"	Multiple Regression
	All Standardized Tests	All Project Students	Fall & Spring	LDTC - Ms. Ruth Levick	"	Multiple Regression

D. Results and Analysis

Objective a.

(1.) Early in the school year and again close to the end of the school year, in each of the 3 years of the Project, student behavior was observed and recorded using the CHADS management system. The frequency of infractions for each of the CHADS behaviors was recorded for an equal length of time for students enrolled at the time of both observations. It is expected that the mean of infractions will be significantly higher in the Fall than in the Spring if the program is having a positive impact by changing social behaviors. A matched group t test is used for the analysis. Third Year. As expected the pre program mean of 70.15 is significantly higher than the post program mean of 25.55 ($t=-4.04$; df 19; $p \leq .001$). See Table 1. Second Year. As expected, the mean of infractions was significantly higher in the Fall than in the Spring with the pre program mean of 42.78 being significantly higher than the post program mean of 14.33 ($t=-2.35$; df 8; $p \leq .025$). See Table 2. First Year. As expected, the pre program mean of 510 is significantly higher than the post program mean 109 ($t=2.10$; df 6; $p \leq .05$). See Table 3.

(2.) For each 15 minute period of the school day, students are awarded tokens for exhibiting appropriate behaviors. The tokens are useable for purchases at the Project-operated Mini Mall. It was expected that the mean of the number of individual tokens awarded for the final quarter of the school year would be significantly higher than the mean number of individual tokens awarded during the first quarter (the number of days is equal) if the Project is successfully changing the social behavior of students. A matched group t test was used to examine the differences in the pre and post program means. As expected, the post program mean of 2459 during the third year is significantly higher than the pre program mean of 2028 ($t = 2.50$; df 23; $p \leq .01$). See Table 1.

TABLE 1

Comparison of Pretest

And Posttest Scores

Third Year

Measure	N*	Pretest Mean	Pretest S.D.	Posttest Mean	Posttest S.D.	d.f.	t value	One-Tailed Probability
ray Oral Reading	28	37.64	14.97	46.60	17.48	27	7.08	$p \leq .001$
ray Comprehension	28	25.03	5.94	28.21	6.09	27	5.89	$p \leq .001$
RA Math	28	22.25	8.98	34.05	9.17	27	10.44	$p \leq .001$
RA Reading	28	30.61	12.15	40.64	10.48	27	7.31	$p \leq .001$
eabody	28	92.11	11.60	99.21	11.25	27	7.42	$p \leq .001$
ates Reading	28	12.89	2.90	17.14	4.00	27	7.85	$p \leq .001$
RAT Math	28	36.07	6.03	41.92	6.23	27	12.30	$p \leq .001$
otal Verbal	28	198.61	28.21	231.46	34.35	27	12.28	$p \leq .001$
otal Quantitative	28	58.32	13.75	76.32	14.28	27	15.04	$p \leq .001$
-H-A-D-S Total	20	70.15	49.31	35.55	25.63	19	-4.04	$p \leq .001$
okens Total	24	2028.42	932.02	2459.13	1080.09	23	2.50	$p \leq .001$

* Number of matched cases

TABLE 2

Comparison of Pretest

To Posttest Scores

Second Year

Measure	N*	Pretest		Posttest		d.f.	t value	One-tailed Probability
		Mean	S.D.	Mean	S.D.			
ates-McKillop	14	5.43	1.23	5.94	1.20	13	4.06	$p \leq .005$
ey Math	14	6.24	1.31	7.23	1.53	13	5.34	$p \leq .001$
PVT	14	13.35	2.93	14.47	3.13	13	4.36	$p \leq .001$
etroit	14	12.42	1.29	13.75	1.31	13	5.00	$p \leq .001$
ABE Reading	14	5.01	1.64	5.83	1.25	13	2.39	$p \leq .025$
RA Reading	14	32.00	11.72	43.93	8.17	13	7.54	$p \leq .001$
HADS	9	42.78	37.18	14.33	9.89	8	-2.35	$p \leq .025$

* Number of matched cases

TABLE 3

Comparison of Pretest

And Postest Scores

First Year

Measure	N*	Pretest		Posttest		d.f.	t value	One-tailed Probability
		Mean	S.D.	Mean	S.D.			
PVT	16	12.81	3.49	14.14	3.61	15	4.14	$p \leq .001$
etroit	17	11.75	1.78	12.89	1.72	16	4.79	$p \leq .001$
ates McKillop								
Oral Reading	17	4.57	1.49	5.19	1.91	16	2.81	$p \leq .01$
Word Recog.	18	4.58	1.07	4.98	1.34	17	2.59	$p \leq .01$
Spelling	14	3.94	1.13	4.44	1.50	13	3.26	$p \leq .005$
ey Math	18	5.50	1.10	6.61	1.38	17	6.95	$p \leq .001$
HADS	7	510.00	498.00	109.00	76.00	6	2.10	$p \leq .05$

* Number of matched cases

(3.) It is expected that 60% of all second year students will maintain vocational mainstreaming status by adhering to provisions of behavior contracts calling for students to receive a yearly total of at least 60 points on the behavior traits for which they are evaluated quarterly by teachers. A student whose behavior is judged as being satisfactory on a trait received 6.25 points for the quarter. With 4 traits and 4 grading periods, a student could receive a maximum of 100 points. Fourteen of the 22 mainstreamed students during the third year met or surpassed the standard of 60 that was set by Project staff and teachers as reflecting minimally acceptable behavior. With 64% of the students maintaining mainstreamed status, the standard is exceeded.

(4.) As noted in above, a pre and post program observations examination of CHADS behaviors was conducted. The duration of time for observation was equal for both intervals of observations. It was expected that a reduction in frequency of infractions from pre to post would be at least 50% for each of the CHADS behaviors individually, as well as for all behaviors combined. This level was established as a result of examining data during the year prior to the first Project year. Third Year. For Cursing, the reduction in infractions is from 99 to 50, a 75% decline. For Hitting, the reduction is from 5 to 3, a decline of 40%. For Assigned Area, the reduction is from 130 to 66, a 50% reduction. For Daydreaming and Disrupting, the reduction is from 524 to 333, a decline of 37%. For Staying on Task, the reduction from 645 to 284 amounts to a 56% decline. Overall, the reduction from 1403 to 711 infractions is a 50% decline. The standard was met for 3 of the 5 individual behaviors and for the overall CHADS system as well. Second Year. For Cursing, the reduction in infractions is from 46 to 28, a 40% reduction. For Hitting, the reduction from 11 to 0 is a 100% decline. For Assigned Area, the reduction is from 71 to 22, a 69% decline. For Daydreaming and Disrupting,

the reduction was from 245 to 64, a 74% decline. For Staying on Task, the reduction is from 109 to 51, a 53% decline. Overall the reduction from 470 to 165 is a 64% decline. The standard was met in 4 of 5 of the behaviors and in the overall CHADS system. First Year. For Cursing, the reduction in infractions is from 255 to 130, a 49% decline. For Hitting, the reduction from 276 to 87 is a 68% decline. For Staying in Assigned Area, the reduction from 40 to 9 is 78%. For Daydreaming and Disrupting, the decline from 2509 to 376 is an 85% decline. For Staying on Task, the reduction from 314 to 179 is a 43% decline. For the overall CHADS system, the reduction from 3394 to 722 is a 77% decline. In 3 of the 5 individual behaviors and in the overall CHADS, the standard of a 50% reduction in infractions is met or exceeded.

(5.) It is expected that if the program is successful, the social behavior at the end of a student's first year in the program will be equal to that of other students enrolled in vocational programs. The standard of 60% of the students meeting or exceeding the social behavior level of non-Project students was set as the expected level. As noted above, Project students were awarded tokens for exhibiting appropriate behavior. The same criteria and methodology (the CHADS system) were used with 431 non-Project, nonclassified students in the Salem County Vocational Technical School to ascertain the average daily tokens for these students and used as the standard for comparison. The average for the Non-Project group is 67.27 token points per day for the period of observation as compared to the average of 79.88 for the Project group. Furthermore, since 69% of the Project group exceeds the standard of 67, the mean for the comparison group, the achievement criteria is exceeded.

Objective b.

(1.) It is expected for the post program means of Project students in verbal and quantitative achievement scores to be significantly higher than the pre-program means. A matched group t test is used to examine this relationship.

Third Year. As expected, the post-program means for both the verbal and quantitative areas were significantly higher than the pre-program means. (Verbal - Pre $\bar{X}$ = 199; post $\bar{X}$ = 231; t = 12.28, df 27; $p \leq .001$: Quantitative - pre $\bar{X}$ = 58; post $\bar{X}$ = 76, t = 15.04; df 27; $p \leq .001$). See Table 1.

Second Year. On all 6 standardized tests, the post program means are significantly higher than the pre program means. As can be seen from the summary data in Table 2, 4 are significantly higher at the .001 level; one at the .005 level; and one at the .025 level.

First Year. On all 6 standardized tests, the post program means are significantly higher than the pre program means: 3 at the .001 level; one at the .005 level; and 2 at the .01 level. See Table 3.

(2.) It is expected that 75% of all Project students will achieve 5 of the 6 academic growth standards set for them on IEP's as measured by standardized tests, and that for all Project students together, 80% of the IEP growth standards will be achieved. Of the 28 students with pre and post measures in the third year, 22 or 79% of the students achieved at least 5 of the academic growth standards of their IEP. Furthermore, 12 students or 43% reached or exceeded all 6 of the IEP growth standards. For all 28 students together, there are 167 standards set on IEP's that are measured by standardized tests. Of this number, 136 or 87% exceed the IEP standard. In both instances, the achievement criterion is exceeded.

(3.) It is expected that 60% of Project students will achieve a minimum academic standard for quantitative and communication skills set for them by their teachers on a weekly basis. The minimum standard is set as a score of 70 on a scale of 0 to 100, the level equal to that expected of non-Project students. As expected, 51% of Project students reached or exceeded the achievement criterion for quantitative skills with 60% reaching or exceeding the achievement criterion in communication skills.

Objective c.

(1.) It is expected that 60% of Project students enrolled in prevocational shop will demonstrate hand tool skills, vocational safety and complete shop projects at a minimum performance level score of 70 on a scale of 0 to 100. This is the same expected level of performance for all students. Third Year. Ten of the 15 (67%) Project students enrolled in prevocational shop reached the minimum standard of achievement. Second Year. Sixteen of the 21 Project students (76%) enrolled in prevocational shop reached the minimum standard of achievement. First Year. Sixteen of the 22 Project students (73%) enrolled in prevocational shop reached the minimum standard of achievement.

(2.) It was expected that 60% of Project students who are mainstreamed in vocational skills development will acquire the minimum skills of the occupational area of their enrollment. This standard was set by Project staff and vocational teachers based on their knowledge of Project students and the expectations of non-Project students enrolled in the same occupational areas. Third Year. Of the 22 mainstreamed students, 15 or 68% demonstrated in hands-on experiences as having reached the minimum level of skill development. Second Year. Of the 12 mainstreamed students, 8 or 67% demonstrated in hands-on experiences as having reached the minimum level of skills development.

First Year. Of the 8 mainstreamed students, 6 or 75% demonstrated in hands-on experiences as having reached the minimum level of skills development.

Objective d. (Process Objective)

The goal of this process objective is to provide the management, delivery and support system to the project so as to allow appropriate and significant student changes. It is expected, therefore, that a significant relationship equal to or better than the .05 level, exists between variables measuring program activities and variables measuring student outcomes.

(1.) To examine the achievement of this process objective, stepwise (forward inclusion) multiple regression analysis was used to examine the contribution of the independent variable, student behavior, to the total variation of the dependent variable, student achievement, following participation in Project ADVANCE, after removing the effect of student achievement prior to treatment. The dependent variable is measured by the sum of all posttest standardized test scores of the third year. The independent variable, student social behavior, is measured by the total tokens or behavior modification points awarded to Project ADVANCE students for the year, and attendance, the days present for the year. As expected, the largest amount of variation in the dependent variable is attributable to the pretest score, followed by total tokens and attendance. After removing the effects of previous student achievement, the variation in achievement following program participation is significant at the .01 level. ($F=6.7177$; df 2,25; $p \leq .01$). When total tokens is combined with attendance, the amount of variation in student achievement attributable to these 2 variables combined is significant at the .05 level ($F=3.6318$; df 3,24; $p \leq .05$).

(2.) The contribution of program activities as measured by student behavior, the independent variable, to student achievement as measured by the sum of all teacher graded across reporting periods and subject areas, the dependent variable, is examined using a stepwise (forward inclusion) multiple regression technique. As expected, the amount of variation in student achievement explained by total tokens is combined with attendance, the explained variation in the dependent variable also is significant at the .01 level ($F=9.832$; df 2,19; $p - .01$).

Overall Program Results

Based on performance demonstrated by the program during the previous three years, educational significance is primarily a relationship to successful services which address the intent of the mandates of Public Law 94-142 relevant to the least restrictive environment appropriate to classification and individual student needs. Within the degrees of the classification relating to the emotionally disturbed, Project ADVANCE equates to the type of alternative program which delivers necessary services not capable of being provided in the comprehensive or traditional vocational programs.

Careful examination of the data which addresses the behavioral, academic, and vocational components of the program, conclude that the levels of projected development in these areas have been reached based on both practical observation and program results statistically treated. Successful development and service of the program have been further confirmed through reviews by educational agencies in the additional counties of Gloucester and Cumberland. This has been reflected by notable student referrals and enrollments from these areas which were not anticipated or originally designed as targeted service areas of the program.

Concerning Objective #1 relating to behavioral change, program results indicate that between 3 and 4 of the 5 targeted behaviors met the standard of 50% reduction in infractions during each of 3 years of the program as students were measured at the start and conclusion of each school year. Specifically, overall results reflected changes from 50% to a 77% decline in overall reductions of behavioral infractions among the three years of measured program performance.

Relative to Objective #2 concerning academic progress, results of standardized tests indicate significantly higher post-test scores concerning computational and communications skills.

In addition to results of these standardized tests, program results also met projected growth as measured by IEP standards and minimum classroom academic progress as set by instructors on a weekly basis.

Concerning Objective #3 which relates to vocational and pre-vocational development, program results successfully show performance at expected levels concerning skills within prevocational shop activities and advanced vocational training in regular special education vocational programs. All results are based on three years of vocational development results of the Project.

Concerning Objective #4 which is a process objective, this relates to the management, delivery, and support system necessary for the Project to allow appropriate and significant student changes. A positive relationship exists based on a multiple regression analysis used to examine student behavior and achievement based on treatment of the program.

Process of Analysis

The analysis was conducted by William H. Schabacker, evaluation consultant to this project and to others, using the SPSS software package and the IBM twin 3031 computers and other hardware facilities of Educational Testing Service, where Dr. Schabacker was a program administrator prior to assuming independent direct client measurement, evaluation, and research services. For year 3, a 100% quality control check of data transcription from coding sheets to computer input mode was conducted. In addition, a spaced sample of scores on the coding sheets were verified for accuracy by matching them with the source documents.

Unanticipated Outcomes

a. The 4 objectives discussed above were the original objectives. No major unanticipated outcomes were explored in the analysis. There is a hint, however, that student behavior is more acceptable and that academic achievement gains are greater for students who have been in the project for more than one year. The number of students in the first year group and in the combined second and third year group for whom complete data are available, is insufficient to make an exhaustive analysis of this hypothesis at this time.

b. Based on the genesis of the program to provide a county-wide program to meet locally the needs of secondary classified emotionally disturbed youth, the original purpose has changed by expansion. Through examination of the program by school districts from two adjoining counties, the program now serves students in a tri-county area consisting of Cumberland, Gloucester, and Salem.

III. Exportability

1. Educational Significance

Successful demonstration of the educational services of the Project ADVANCE addresses the intent of the mandates in the Public Law 94-142 relating to the least restrictive environment appropriate to classification and individual student needs. Within the spectrum of the classification concerning the emotionally disturbed, Project ADVANCE equates to the type of alternative program which delivers educational services not capable of being provided in the comprehensive or traditional vocational program. In addition, student needs are incompatible within the context of residential placement. Other programs, which to some extent parallel the services provided by Project ADVANCE, normally have been reserved to the private sector. In reference to local needs, such private programs have, in most instances, been deemed inaccessible by distance and questionable by cost.

In reference to cost effectiveness, projected annual operating costs during the first year of an adopted program can realize a savings of 36% to a given school district. Beyond the first year, with the elimination of basic start-up costs, the saving of 42% can be realized.

2. Target Population*

Enrollment of students in the Project ADVANCE Program is exclusively limited to those between the ages of fourteen and twenty and classified emotionally disturbed. Within the spectrum of emotionally disturbed classification, the Project ADVANCE Program is designed for those students whose recommended educational placement does not include residential placement. However, students who have successfully left

*See population chart for sex, grade level, age, and SES (page 32).

the residential environment may be considered for placement at Project ADVANCE, depending on need for a specialized educational program and Child Study Team recommendations. Consequently, referred students to Project ADVANCE fall within the spectrum limited by those students who have demonstrated an inability to benefit from the traditional special needs programs within local school districts and enclosed by the other extreme, being, not requiring full-time residential placement. Some of the characteristics of students enrolled within this population include court-ordered placement, potential incarceration, probation status restrictions, foster home placements, chronic truancy, and a high propensity toward violations leading to school suspensions.

Components of the Project ADVANCE Program are compatible for the needs of a variety of educational settings which must service student populations that include the chronically disruptive student. Extending from the flexibility of replicating individual components within the program to address chronically disruptive students in general, further sophistication exists to exclusively and effectively meet the needs of students classified emotionally disturbed and socially maladjusted.

POPULATION CHART

1977-78

Sex		Grade Levels					Ages							
		8	9	10	11	12	14	15	16	17	18	19	20	Totals
M	34		13	10	6	5	3	5	8	7	4	2	0	34
F	9		2	3	2	2	1	1	2	3	0	2	0	9
Totals	43		15	3	8	7	9	6	10	10	4	4	0	43

1978-79

M	34		16	10	5	3	3	11	9	8	2	1	0	34
F	8		5	1	1	1	2	3	2	1	0	0	0	8
Totals	42		21	11	6	4	5	14	11	9	2	1	0	42

1979-80

M	40	7	9	14	9	1	5	6	17	20	2	0	0	40
F	5		1	2	1	1		1	2	2	0	0	0	5
Totals	45	7	10	16	10	2	5	7	19	22	2	0	0	45

As an indicator of the socioeconomic status of the student population, it is noted that approximately 70% of the students qualify for the school free lunch program in compliance to state guidelines.

Variables within the Salem County Vocational Technical School system which have contributed to overall program effectiveness are shared-time vocational training facilities and supportive services through members of the District's Child Study Team. Although the existence of these variables are desirable for total program operation, they do not reflect necessity as traditional alternatives exist through counseling personnel, teachers of the handicapped and industrial art programs.

3. Staffing and Training Requirements

Based on the wide existence of Special Needs Programs, persons certified as teachers of the handicapped can implement program components through a three to five day program. This training, provided through Project ADVANCE, would also include supervisory, counseling and other supportive services staff. In addition, based on student population and class sizes, instructional aides would supplement needed staff.

4. Materials, Equipment, Facilities

The following materials and estimated cost for adopting districts is presented on the assumption that the district can provide three existing classrooms for full-time use along with one industrial arts class prevocational shop area for use on a half-day basis. Given these initial available facilities, services can be provided to thirty-three emotionally disturbed students reflecting the legal limit of eleven per classroom, under the instruction and supervision of a teacher of the handicapped and one aide, along with one shop instructor. Furniture for three classrooms will include: learning carrels for thirty-three students - $8,250.00; existing shop area to be supplemented with additional tools, equipment and supplies - $1500.00; textbooks for three curriculum areas- $3000.00; reference materials and program operational manuals to include administrative manual, behavior modification manual and curriculum manual - $250.00; audio visual aides, soft ware - $200.00; prevocational shop supplies and behavior modification costs - $5000.00; instructional supplies - $1500.00; AVA equipment - $850.00.

5. Minimum Adoption or Replication

Concerning components of the program, minimum adoption would represent that of the formal Behavior Modification Management System based on the availability of personnel and the number of persons involved in the targeted group. Cost would range from that of consumable and nonconsumable awards to staff salaries and special plant facilities. Adopting agencies would be recommended to review program manuals which include the Administrative Manual, the Behavior Modification Manual, and a Curriculum Manual and to match program components to local district needs.

6. Replication Costs*

The following estimated costs for adopting districts is presented under the assumption that the district can provide three existing classrooms for full-time use along with one industrial arts/prevocational shop area for use on a half-day basis. Given these initial available facilities, startup costs will include the following based on service provided to 33 emotionally disturbed students reflecting the legal limit of 11 per classroom under the instruction and supervision of a Teacher of the Handicapped and one instructional aide, along with one shop instructor.

Furniture for three classrooms will include learning carrels for 33 students	$8,250.
Existing shop area to be supplemented with additional tools and equipment	1,500.
Purchase of program operational manuals to include administrative Behavior Mod and curriculum	50.
Five-day Staff Development Program for five certificated staff and 3 aides	2,350.
One Time Start Up Cost	$12,150.

*See page 37 for cost comparisons.

Replication Costs Continued

The following reflects estimated costs for annual operation of the program:

Program Supervisor	$ 16,000.
Part-Time Custodial Services	3,000.
Counselor	13,000.
Secretary	7,000.
Three Teachers of the Handicapped	33,000.
One Industrial Art Shop Instructor	11,000.
Three Instructional Aides	21,000.
Textbooks for three curriculum areas	3,000.
Reference Materials	200.
Periodicals	300.
Audio Visual Aides, Software	200.
Pre-vocational shop supplies and Behavior Modification Units	6,000.
Instructional Supplies	1,500.
Field Trips	650.
AVA Equipment	850.
Estimated Annual Operating Cost:	$116,700.

7. Special Problems

With the intent of the program to cause successful adjustment of chronically disruptive students within the public school educational setting, problems have been encountered as to a misinterpretation of program services and limitations. Specifically, this area reflects misinterpretation of the program as a panacea for the needs of the total spectrum of chronically disruptive students. Although the program is designed to service those students who have demonstrated an inability to benefit from the regular school setting, it cannot service those students existing in that part of the spectrum requiring full-time, twenty-four hour supervision within a residential environment. This distinction is critical, particularly within judgements made by District Child Study Teams in an attempt to seek the least restrictive

environment as it pertains to individualized educational plans. In addition, districts servicing the chronically disruptive student population, must be aware of the transient nature of students due to court orders, probation, foster parents, incarceration, which directly influence attendance and length of treatment by program. Another area requiring close examination is the identification of properly trained instructional staff possessing the ability to service the needs of disturbed and socially maladjusted youth.

Based on the experience of the program, it is recommended that coordination be refined with social agencies and courts concerning potentially referred students and students served within the program. It is also recommended that comprehensive instructional data be provided to referring Child Study Teams concerning the intent, design, and limitations of the program's educational services.

REPLICATION COSTS
(Cost Comparisons)

In order to address the cost of working with students without the program, it must be noted that the targeted population, being secondary classified emotionally disturbed students, has in most cases been excluded from traditional comprehensive high school programs, traditional vocational schools, and traditional special needs programs. Alternatives which remain usually fall under private day school placement, fulltime residential, and the possibility of incarceration. In response to private day placement, issued state maximum for the E. D. population is $7200. Residential placement tuition ranges from $12,000 to $18,000. Incarceration costs at Jamesburg, Yardville, and Skillman range from $12,000 to $20,000. Although it is recognized that incarceration cost is a state responsibility, it is given to complete the total perspective of related alternate costs.

Based on private day placement ($7200), Project ADVANCE is 44% ($5,000) less in tuition.